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## MONEY AND PRICES—DISCUSSION

E. W. KEMMERER.—The field covered by the papers of Professors Fisher and Anderson is such a wide one that I feel constrained by the ten minutes allotted to me in the discussion to limit my remarks to two points only. One of the two is a development of Professor Fisher's third point concerning the war's evidence on the doctrines of the bullionist or metallist school; and the other is a brief comment on the concluding remarks, concerning the quantity theory of money, in Professor Anderson's paper.

How even before the war the bullionist doctrine of the value of money could survive in responsible quarters, in the light of recent monetary experiences of such countries as India, Austria, the Strait Settlements, Porto Rico, and the Philippines, is difficult for me to understand. On this subject the experiences of the war period are particularly illuminating.

A superficial statement of the relation between the value of standard money, under a system of free coinage, and the value of its bullion content, a statement to which both believers in the quantity theory and believers in the bullionist theory would probably agree, is as follows.

Under normal conditions the value of standard money conforms closely to the value of its bullion content. A gold dollar has a value almost exactly equivalent to the value as bullion of 23.22 grains of pure gold in the financial centers. If 23.22 grains of pure gold in the United States are for any reason worth more as money than as bullion, more gold is brought to the mints, the supply of gold coin and gold certificates in circulation is increased, and the value of the dollar tends to decline to its bullion par. If, on the other hand, 23.22 grains of gold are worth more as bullion than as money, the flow of gold to the mint declines, some gold coin may be melted and exported, or exported as money, the relative supply of money declines, and the value of the gold coin rises to its bullion par.

In explaining these facts the bullionist theorist says that the value of the gold money—and therefore of dependent forms of money—is determined by the bullion value of gold coins. The quantity theorist, on the other hand, says that the value of money is determined by the demand for money relative to the supply of money, and that the bullion value of gold coin and the money value normally conform only because free coinage and the comparatively free movement of gold into and out of the country bring about an adjustment of the relative supply of money

to the bullion value level. He maintains that the law of demand and supply in its application to money itself is the fundamental thing, the value of money's constituent metal being secondary. Briefly stated, the quantity theorist places the emphasis upon the supply and demand for money, the bullionist theorist upon the supply and demand for gold. Under normal conditions both explanations seem to conform to the facts.

The war, however, has created abnormal conditions in many countries. It has dissociated the fluctuations in the bullion value of the standard money from the inverse fluctuations in the supply of standard money. The United States, England, Japan, Germany, Mexico, and numerous other countries have placed embargoes upon the exportation of gold, while Sweden, and, I believe, some of the other Scandinavian countries, have placed restrictions on the importation of gold. There is no longer a ready flow of gold from country to country. No longer does the supply of money respond fully to changes in value of gold bullion. Money supply and bullion value of money are divorced.

Within each of the belligerent countries, moreover, and some of the neutrals, the government has made strenuous efforts to impound in its central bank vaults or in government treasuries all the available gold. It is bad form, unpatriotic, and in some places closely akin to treason for an individual to have gold coin in his possession. In most belligerent countries today the gold standard is a myth.

Now that changes in demand and supply in the case of money in many countries no longer accompany changes in the bullion value, the question presents itself: Which of these two forces appears to control the value of the monetary unit? The war is giving no uncertain answer to this question. Look today at the Scandinavian countries and at Spain. The Swedish unit of value, the gold crown, contains 6.22 grains of pure gold, and is therefore the gold equivalent of 26.8 cents United States money. Sweden produces practically no gold and there is little or no unfabricated gold in Sweden. At today's quotation (December 20) the value of the Swedish crown in terms of United States gold as measured by Stockholm exchange rates is 33.25 cents, representing a premium of 24 per cent above its value as gold bullion. Computed in the same manner, the Danish crown was at a premium of 17½ per cent, and the Spanish peseta at a premium of 12½ per cent. The flow of gold into these countries being restricted, the money supply has not increased in its due proportion in response to the depreciation in the value of gold in outside markets. The result is that the money of these countries possesses a scarcity or monopoly value. It

is clearly demand and supply that rules here, not bullion value. In the words of Ricardo's famous dictum, there can be no depreciation except from excess.

One of the most striking illustrations of this principle that can be found in monetary history has existed for some months in Mexico. That country today is unique in the fact that it is a country whose media of exchange are exclusively metallic money. Practically all the banks are closed. The few that are open are confining their business practically to dealing in demand and cable exchange with foreign countries. One can neither deposit money in Mexican banks today nor withdraw money that he has deposited there in the past. There are no bank notes in active circulation and no checks. The Mexican mint at present will coin all gold brought to it, making only a brassage charge of one-half of 1 per cent. The unit of value is 75 centigrams of pure gold, which is equivalent to 49.85 cents of United States gold coin. Adding the brassage charge of one-half of 1 per cent would make the cost of the gold peso equivalent to that of 50.1 cents of United States gold money. On September 20 of this year a gold peso in Mexico City would buy 55.87 cents of United States money in the form of a demand draft on New York City or in the form of United States paper money (including gold certificates). Here was a premium of 11.8 per cent for Mexican gold money over United States money which represented gold in New York. It was accounted for by the relative scarcity of money in Mexico as compared with the United States. The supply of gold money in Mexico could not increase under the lure of this premium because of the gold embargo and other obstacles to its flow from the United States to Mexico City, and because of the comparatively low production of gold in Mexico at the present time. The supply of silver coin could not be increased because the high price of silver made its purchase for coinage prohibitive. Hence a scarcity value of money in Mexico, representing approximately 12 per cent premium over the bullion value of gold coins. Gold coins were everywhere circulating at this high money value.

During a brief period in which the mint was closed to the coinage of gold, the local price of gold fell.

Just as the scarcity value of gold coin in Mexico exemplified Ricardo's dictum that there can be no depreciation except from excess, so did the high bullion value of silver coins exemplify the obverse of this dictum; namely, that there can be no appreciation except from redundancy. During the last ten days of September in Mexico there circulated freely throughout the Republic, at par with Mexican gold

coins, silver half pesos, and fractional silver coins of lower denominations. The principal silver coin in Mexico then, as now, was the tostone or half peso. On September 20 two tostones in Mexico circulated everywhere as the equivalent of one gold peso, but the silver they contained was worth in the New York silver market 70 cents of United States money. Here then was a situation in which gold coins containing approximately 50 cents' worth of gold circulated as the equivalent of 55.87 cents, because of scarcity, while silver coins containing 70 cents' worth of silver circulated peso for peso as the equivalent of these gold coins, or at a value of about 20 per cent below their bullion value. Just as the gold coins could not depreciate to their bullion value because they were so scarce, so the silver coins could not appreciate to their bullion value because they were so plentiful. Their melting down or exportation was prohibited under heavy penalties. The supply could not be reduced and so they circulated then as they do now at the value determined by demand and supply, with little or no regard to the value of their bullion content. A similar situation existed in the Philippines and in Japan in September, 1917. *No depreciation except from relative excess. No appreciation except from relative scarcity.* These are two fundamental laws of monetary science and the experiences of this war are writing them in capital letters.

The second point I wish to discuss concerns Professor Anderson's closing remarks on the quantity theory. My time will permit but a brief comment on this subject. At another time I hope to discuss Professor Anderson's views on the quantity theory, as expressed here and elsewhere, more fully.

I see no inconsistency between Professor Anderson's opinion as to the effectiveness of the government's efforts to fix the prices of certain articles of war necessity, and the quantity theory of money; nor do I agree with Professor Fisher's assertion that the quantity theory necessarily requires that if some prices are fixed below what they would normally be, others must rise above the normal level to take up the slack, as it were. That may or may not take place. The quantity theory equation contains other factors besides those of money and credit. It contains factors for the rate of monetary turnover, the rate of deposit turnover, and for the number of transactions to be effected; and it involves assumptions concerning the changing states of business confidence and of banking organization. Like any other natural law, it merely declares what will happen under given conditions. The government's attempts at price-fixing are only one part of a new economic complex created by the war, which affects every factor in the price equation.

Briefly summarizing, I believe that the general tendencies are something as follows: With the outbreak of the war the government is confronted with a certain level of prices and wages; with the necessity of securing a maximum quantity of certain supplies; and with a credit system based upon a certain average percentage of cash reserves. Confronted with this situation the government issues orders for the maximum production of certain commodities, munitions, ships, military clothing, etc.; and, in order to pay for the new supplies, the government takes measures which result in the rapid expansion of credit. Legal reserve requirements of banks are reduced in terms of percentages, and the federal reserve law is so changed that legal reserves are to consist only of deposits in federal reserve banks, against which deposits the federal reserve banks are required to keep only a moderate reserve. Gold is impounded and federal reserve notes with a legal reserve of 40 per cent are substituted in large quantities in circulation for gold certificates carrying a reserve of 100 per cent. Various devices are utilized to lessen friction, and increase the effectiveness of our banking machinery—devices such as the new collection and clearing system of our federal reserve banks, the gold settlement fund at Washington, and the federal reserve agents' settlement fund. All this gain in the efficiency of money and credit, which is equivalent to an increase in the supply, the government attempts to take to itself in order to provide funds for meeting war expenses. This extension of credit, and this increase in the efficiency of money and of credit, are applied to the new demand for war supplies and rapidly push up prices. In a degree the government seems to be trying to lift itself by its own boot straps. Then comes the call for government regulation of prices, accompanied by patriotic appeals to the public to economize in every possible way, and above all to refrain from using more articles of war necessity than are absolutely necessary—articles such as copper, iron, wheat, meat, etc. The patriotism of the public is appealed to in the strongest possible way to refrain from extravagance in consumption, and to postpone until after the war all new building and all extension of capital equipment not required for the prosecution of the war. The government's borrowing, accompanied by the heavy destruction of capital, forces up the interest rate, and a high and rising interest rate supplements the above patriotic appeal in discouraging capital extensions for non-military enterprises. To an ever-increasing degree the government becomes the buyer of the nation's products, and private industry to meet private needs drops into the background. The government, however, in important lines, such as

shipbuilding, production of munitions, etc., is whipping up the pace to the maximum. The number of transactions on government account increases enormously, the number on private account declines, the rate of monetary and deposit turnover for government business likewise increases. Those in many lines of private enterprise decline. Speculative dealings on the produce and stock exchanges, which normally absorb a large percentage of our credit media of exchange, fall off. What is the net result of such forces upon such items in the price equation as the average rate of monetary turnover, the average rate of deposit turnover, the amount of goods being bought and sold, etc.? Questions like these are fundamental and need to be answered in interpreting the quantity theory in the light of war conditions. These questions Professor Anderson ignores in his paper. In fact in that part of the paper in which he deals with the quantity theory he speaks largely obiter.

DUNCAN A. MAC GIBBON.—With regard to Dr. Anderson's statement that price-fixing has proved a success with regard to flour, I do not think that could be said of the Canadian situation. Price-fixing may have one or several objects in view. It may be to eliminate profiteering, to keep down the high cost of living, or in certain cases to fix prices at which goods shall be purchased for the state. Now in the case of the Canadian flour situation, an examination of the trading accounts and balance sheets of the leading flour manufacturers does not suggest that price-fixing has been at all successful in curtailing large profits. Depreciation accounts have been exceedingly well cared for and profits themselves have been quite on the increase. With respect to the high cost of living, the index number of the Department of Labor does not show any significant decrease. Moreover, it is competently reported that the margin on flour allowed by the food controller to the millers is larger than they ordinarily, without price-fixing, expect to achieve. The food controller allows a net profit of twenty-five cents on the barrel; the millers considered themselves happy in the case of flour if they were able to break even, relying upon the by-products for their profits. Under these circumstances one can scarcely hail price-fixing in the matter of flour as a striking success in Canada.

HUGO BILGRAM.—I am one of those who dispute the volume theory of the value of money, considering the commodity theory as the only tenable one.

Advocates of the latter theory do not deny that importation of gold tends to reduce its value, or to raise the price level, and this can fully account for the similarity of the curves of price level and volume of money.

The volume theorists speak of a money unit. To me such a unit is inconceivable, and I shall try to explain wherein my difficulty consists.

In my hand I hold a piece of metal. This piece possesses weight, independent of whether we have or have not adopted a unit in terms of which to express weight. For this reason this piece of metal might have been adopted as our unit of weight, our pound.

Now I hold in my hand a rod of iron. It has length, independent of the fact that we have already adopted a unit of length and can express the length of this rod in terms of feet. If a unit of length had not already been adopted, this rod might have been chosen as our unit of length, our foot.

A nugget of gold possesses value, or purchasing power, whether or not we have adopted a unit of value. A gold nugget of given weight can therefore serve as a value unit, as a dollar.

When it comes to legal tender notes, the case is radically different. A note, though legal tender for all debts, unless its value is stated in terms of some value unit, say dollars, cannot have any value. A legal tender note cannot be used as a measure of value, because its value must first be stated in terms of some unit and it must be redeemable at the stated rate. I cannot therefore conceive what can possibly be meant by a money unit. It would be more reasonable to speak of a ton as a coal unit, or of a yard as a dry-goods unit, for coal and dry goods possess weight and length, while legal tender money, unless its value is first stated in terms of dollars, can have no value.

The volume theory of money, it seems to me, is based on the notion that money can have value independent of the previous adoption of a value unit, and it is therefore to my conception an incomprehensible idea. This leaves me no choice but to accept the commodity theory.

The experience of Professor Kemmerer can, I think, be explained without militating against the commodity theory. Mexico has adopted the silver standard, and, if gold be coined into legal tender pieces, it is not unlikely that those gold coins bear the same relation to the Mexican standard silver coin as our silver dollars bear to our gold standard money. Just as our silver dollars can buy more silver than their own weight, so would the Mexican gold coins buy more gold than their weight. And the isolated cases mentioned by Professor Fisher,



which he thinks refute the commodity theory, can no doubt be explained consistently with that theory.

L. D. H. WELD.—The discussion of price control and the quantity theory of money have been interesting and instructive, but except for the remarks of Professor Davenport, one would hardly realize from what has been said that the country is at war, and that it faces immediate problems of tremendous economic significance and importance. It is well that we should appoint a committee to report on the purchasing power of money a few months hence; but how much better it would be if we could appoint a committee to report within thirty days in Washington, and give some sound and practical advice to the Food Administration on the subject of price control.

I am chagrined that no economists have been called in to advise the Food Administration. Mr. Hoover is reported to have said at one time that he would not be influenced by the theories of professors, but that he was going to deal with the situation in a practical manner. It is a serious reflection on the economist to be passed over when the government is undertaking such an important and radical policy as the regulation of prices.

From the first, the government has not realized sufficiently the function that it must assume by taking away the speculative and price-making functions of merchants. Through speculative competition, the market price becomes adjusted so that the supply of a commodity is automatically distributed geographically, so that each section of the country, each city, and each store gets the supply that it requires. It also automatically distributes the available supply over a period of time, so that it lasts until a new supply can be obtained.

If the government deprives merchants of performing these two important functions, the government itself becomes responsible. In other words, the government must parcel the supply out to each community in accordance to its needs, and it must regulate the outflow from week to week, so that the supply will last until the next crops are available. To require merchants to sell on the basis of cost price, rather than replacement price, has the same effect in this respect as actual price fixation, though in a lesser degree.

That the government has not parceled out the sugar and coal supply according to the needs of different sections of the country is obvious. This perhaps might be overlooked; but I shall not consider price control a success until I find out whether the present supplies of wheat and other commodities last until the next harvests. Whether or not

price control is justifiable, the fact remains that the government did not sufficiently realize that it was becoming responsible for the performance of these functions.

The trouble with economists is that they do not get near enough to present-day, practical problems. After the war, they may be able to tell, in an uninteresting way, why price control was a success or a failure; but they are powerless and lacking in sufficient influence to help solve such a problem when it is forced upon the country.

I am not denouncing theoretical economies by any means; I merely appeal for a linking up of theory with practical every-day problems. This calls for more contact with business machinery and business men. I believe, for example, that more valuable contributions can be made to the theory of market price by getting out into the markets with a market reporter than by cogitation in a closet. Let us try to get away from the reputation of being "theoretical" and develop a reputation for being able to put our theories to some practical use.

*Rejoinder by B. M. ANDERSON, JR.*—The quantity theory plays a minor part in the paper I read, and for the justification of the views there advanced I would refer to the fuller discussion in my book, *The Value of Money*, the chapter on "The Passiveness of Prices." In the interesting facts presented by Professors Fisher and Kemmerer regarding Sweden and Mexico I find nothing novel in principle. I should agree with them that the strict commodity or bullionist theory of money, which explains the value of money solely by its bullion content, or by its prospect of redemption in bullion, cannot explain these cases. But I do not think that the quantity theory explains them either. Similar cases are discussed at length in my book, chapters VII and XXII, and I content myself with referring to these chapters. It is easy to find exceptions to Professor Kemmerer's dictum, "No depreciation except from excess." One striking case is that of the demand notes and state bank notes early in 1862, when gold left the country under Gresham's law, leaving a monetary vacuum, accompanied by rising prices and a gold premium on the paper money.

Professor Fisher's statistics call for several comments. First, he has taken account of only a small part of the prices. If stock and bond prices, and real estate prices, be included, weighted by the number of exchanges that occur in them, the price level has fallen heavily since June last. Wholesale prices are only a minor element in the price level of "the equation of exchange." City real estate in Boston, New York, St. Louis, and Chicago, and in various smaller places, has

fallen heavily in price in the last three years. Farm lands, despite the great increase in prices of farm products, show no rise, or moderate rises. Stocks and bonds have been cut drastically. I see no rise in the "general price level." Rather, I see a great rise in the values and prices of articles used for war, and other goods for immediate consumption currently produced by labor, with a great rise in labor itself; and, on the other hand, a great fall in long-time income bearers, as men and governments sacrifice everything available in the future to get hold of the absolutely essential present goods. Where goods for local consumption have not decreased in quantity, their prices show no rise. Coffee has fallen. House rents, taking the country over, have risen little if at all. The gold dollar seems to me not to have changed much in value. I think it has proved an accurate yardstick, correctly registering a rise in present commodities and a fall in long-time income bearers. There seems to me to be a vital difference between depreciated paper money in Continental Europe, no longer convertible into gold, and the gold dollar itself. Rising commodity prices, falling prices of lands, stocks and bonds, and a rising long-time interest rate, are all phases of one general movement in the value and price system.

Second, it will be noticed that prices have risen faster in the countries which have been losing their gold than in the United States, to which gold has come. The main cause is with goods, not with gold. Professor Fisher's figures for the United States run in terms of money and prices; his figures for England run in terms of treasury bills and prices. They are not comparable, and do not prove the same thing. If bank expansion be compared with prices in the United States, it will appear that the period since we have entered the war, when bank expansion, under the influence of treasury bills and Liberty Loans, has moved most rapidly, has been also the period of slowly rising commodity prices. Dun's index number for December shows a slight decline. The great rise in Dun's index number is from January to June, when there was a rise of forty-three points. From June to December, when the great expansion of bank credit came, the rise in Dun's index number is only eight points, and along with this has come the dramatic fall in stocks and bonds, and something approaching panic in the city real estate in New York and Boston. The very crest of the *Annalist* index number was reached in May. The high coefficient of correlation which Professor Fisher finds between money and prices in the United States is due, I should suppose, to the "common element of growth" in both. If the method of "percentage devi-

ation" be used, no such coefficient could be found. Professor W. M. Persons informs me that, taking a series of years, he finds a substantial coefficient of correlation between money and prices when prices change first; but if a lag is allowed for prices, money changes being allowed to come first, he finds either no correlation, or a negative correlation.

I agree with Professor Davenport that some form of rationing will probably prove necessary as part of the price-fixing policy. I meant to indicate that in my main paper. To a large extent, it has already been introduced, and it will probably have to go much farther.

*Rejoinder by IRVING FISHER.*—Professor Anderson's criticism does not, it seems to me, materially affect the argument I made.

The high coefficient of correlation, which I said I believed would be found, *did* refer to the method of "percentage deviation." I stated this on the basis of a careful inspection of the figures, but not on the basis of any actual calculation as yet.

Statistics of wholesale prices are, I believe, the most significant statistics which can be used for the purpose in hand; because (1) they are more accurate than any other price statistics; (2) they are widely representative, e.g., of a great number of other prices, retail prices, producers' prices, jobbers' prices, etc., and even wages; (3) they are the most sensitive to any influences tending to produce price changes and so afford a good measure and test of such influences.

In any index number ideally calculated for the "equation of exchange," real estate would be a negligible factor; so would bonds, and I doubt if even stocks have anything like the importance attributed to them by Professor Anderson. His studies in these directions are interesting and helpful, but not conclusive.

I have inspected the course of prices in stocks and see no reason to believe that, if included, they would destroy the correlation found, even if given far more weight in the average than their comparatively slight importance (in my opinion) requires.

I subscribe to Professor Anderson's statement that war has a tendency to increase the valuation of present and decrease that of future goods, subjectively. This observation is quite pertinent in reference to some problems concerning the dollar as a good "yardstick"; but it is not at all pertinent as to the relation between the quantity of money and the price level. Here the problem is purely relative.

I do not think that the facts will bear out Professor Anderson's impression that "where goods for local consumption have not decreased in

quantity their prices show no rise." House-furnishing goods, for instance, may be cited to the contrary. The case of coffee cited by Professor Anderson seems to be entirely explainable because of the enormously increased imports into this country, which became a sort of dumping ground for Brazil when its trade with Europe was interfered with by the war.

The decrease in the purchasing power of gold abroad is, of course, explainable through the increase in paper substitutes.